WHAT IS CLAIM IS:

1. A frequency detection method comprising:
establishing a preset value;
presetting a counter value to said preset value;
changing said counter value from said preset value in response to a voltage controlled oscillator (VCO) signal over a known time period; and
obtaining frequency information related to said VCO signal from said counter value at the end of said known time period.

2. The method of claim 1 wherein said preset value is programmable over a range of values.

3. The method of claim 1 wherein said preset value is selected such that said counter value is at one-half full-scale at the end of said known time period when the VCO signal is oscillating at a target frequency.

4. The method of claim 2 further including measuring said known time period using a reference clock signal.

5. The method of claim 1 further including using said frequency information to control the frequency of said VCO signal.

6. The method of claim 1 further including:
establishing a deadband value;
comparing said frequency information to said deadband value; and
determining, in response to said comparison, whether or not the frequency of said VCO signal is controlled in response to said frequency information.

7. The method of claim 6 wherein said deadband value is programmable over a range of values.

8. The method of claim 1 further including:

establishing first and second deadband values;

comparing said frequency information to said first deadband value of second deadband value; and

determining, in response to said comparison, whether or not the frequency of said VCO signal is controlled in response to said frequency information.

9. The method of claim 1 further including selecting one of multiple different charging currents in response to said frequency information.

10. A frequency detector comprising:

a counter configured to receive:

a voltage controlled oscillator (VCO) signal; and

a preset value; and

a controller operable to control said counter;

wherein said counter is operable to output frequency information related to said VCO signal in response to said controller, said VCO signal, and said preset value.

11. The frequency detector of claim 10 wherein:

said controller is additionally configured to generate a preset signal and an enable signal to control said counter;

said controller generates said enable signal for a known time period in response to a reference clock;

said preset signal sets said counter to said preset value; and

said frequency information is generated by said VCO signal changing said counter over said known time period in response to said enable signal.

12. The frequency detector of claim 10 wherein said preset value is programmable over a range of values.

13. The frequency detector of claim 10 wherein said preset value is selected such that the counter is at one-half full-scale at the end of said known time period when the VCO signal is oscillating at a target frequency.

14. The frequency detector of claim 10 further comprising deadband logic in signal communication with said counter, said deadband logic configured to determine whether or not the frequency of said VCO signal is controlled in response to a signal from said frequency detector.

15. The frequency detector of claim 14 wherein said deadband logic is configured to compare said frequency information with a deadband value.

16. The frequency detector of claim 15 wherein said deadband value is programmable over a range of values.

17. The frequency detector of claim 14 wherein said deadband logic is configured to use dual deadband values to determine whether or not the frequency of said VCO signal is controlled in response to a signal from said frequency detector.

18. The frequency detector of claim 10 further including logic in signal communication with said counter for providing different charging currents dependent on said frequency information.

19. A phase-locked loop comprising:

a voltage controlled oscillator (VCO); and

a frequency detector in signal communication with said VCO, said frequency detector including:

a counter configured to receive:

a VCO signal from said VCO; and

a preset value; and

a controller operable to control said counter;

wherein said counter generates frequency information related to said VCO signal in response to said controller, said VCO signal, and said preset value.

20. The frequency detector of claim 19 wherein:

said controller is additionally configured to generate a preset signal and an enable signal to control said counter;

said controller generates said enable signal for a known time period in response to a reference clock;

said preset signal sets said counter to said preset value; and

said frequency information is generated by said VCO signal changing said counter over said known time period in response to said enable signal.

21. The frequency detector of claim 19 wherein said preset value is selected such that the counter is at one-half full-scale at the end of said known time period when the VCO signal is oscillating at a target frequency.

22. The frequency detector of claim 19 further comprising deadband logic in signal communication with said counter, said deadband logic configured to determine whether the frequency of said VCO signal is controlled in response to a signal from said frequency detector or a signal from a phase detector.

23. The frequency detector of claim 22 wherein said deadband logic is configured to use dual deadband values to determine whether the frequency of said VCO signal is controlled in response to said signal from said frequency detector or said signal from said phase detector.

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24. The frequency detector of claim 19 further including logic in signal communication with said counter for providing different charging currents to said loop filter dependent on said frequency information from said counter.